

TECHNOLOGY PLANNING

Summarized from an Interview with James G. Batterson¹

Integrating technology into instruction requires educators to develop comprehensive plans. The Commonwealth of Virginia currently operates under the *Educational Technology Plan for Virginia: 2003–2009*, which serves as a blueprint for school divisions to enhance students' academic achievement through technology. Each division must devise its own technology plan, which defines a strategic direction for the short term and long term. Each school board must ensure that its division fulfills the technology goals outlined in the plan.

The Department of Education provides division administrators with resources and technical assistance related to technology planning. In this role, the Department periodically interviews researchers and authors. The following information is summarized from a recent interview with James G. Batterson regarding long-term strategic planning in areas of rapid development or change.

The Planning Committee

Batterson recommends a holistic approach to planning. The chief executive administrator may lead the planning process; however, successful planning must cut vertically throughout the division with input from all levels. A planning committee can help solicit and compile the input, which also may be sought from outside the division. Each group of key stakeholders should be represented on the planning committee. Key external stakeholders include businesses and organizations, parents, and school board members. All key internal and external stakeholders should help define the mission and identify issues.

The division's planning team should strive to achieve these objectives:

- Provide all key stakeholders an opportunity to offer input, understand issues, have dialogue, and support the plan and the program more effectively
- Recognize weaknesses and build on strengths
- Identify problems and opportunities that current plans do not consider
- Develop strategies that lead to best practices in educational technology for the users and that achieve the goals of the plan

Virginia Department of Education

James Monroe Building
101 North 14th Street
Richmond, VA 23219

804-225-2855 phone
804-371-2455 fax
www.doe.virginia.gov

For more information, contact:

Lan Neugent

Assistant Superintendent for
Technology & Career Education

804-225-2757
lan.neugent@doe.virginia.gov

Tammy M. McGraw, Ed.D.

Director, Office of Educational
Technology

804-225-4429
tammy.mcgraw@doe.virginia.gov

Think about the Year 2030

The planning team must be familiar with existing state and school division technology plans and strategies. The first planning step is to review how the division got to where it is today: the history of the educational technology program, integration of technology into the instructional program, and results to date.

Grounded in the existing plans, the team must think outside today's organization and anticipate developments far in advance. Members must identify the current and future customers (e.g., teachers, students, administrators, parents) of educational technology. They should try to foresee what these customers might need in the year 2030. Reading selected materials will help stretch their thinking into the *next domains* of time and organization. Through reading, visitations, and presentations, they may identify new and future technologies with potential educational applications.

While considering the *next domains*, they should recognize the political, economic, environmental, social, and technological (PE²ST) factors that could affect schools or the entire educational enterprise in 2030. The committee should determine the critical PE²ST driving forces that may influence the future of education and technology. Scenario-based planning interprets uncertain factors that can affect decision making and planning. Interpreting the uncertainties of the future can make committee members uncomfortable, so the team needs an experienced facilitator to channel discomfort into creative resolutions of the conflict.

Once the committee identifies a set of critical PE²ST factors, they should address the following questions through the lens of the *next domains* in time:

- What types of students or employees will higher education, business, and industry expect as graduates of the division's K-12 program in 2030?
- Who will be the division's customers for and suppliers of educational technology in 2030?

From 2030, the committee needs to work back toward 2015. It is important to go further into the future first and then work backward, which helps avoid an evolutionary planning of "do more of the same, but better." Budgetary concerns should not restrict the committee's vision for the future of educational technology.

The division's mature and aging technologies—and their potential replacements—will factor into the planning. The committee must determine specific technologies that must be in place over the next few years to meet identified needs.

The planning committee needs to align its plan to recognize educational technology standards for students, teachers, and administrators. The plan should also align to the state's educational technology plan. Alignment of plans enables divisions to maximize the state Department of Education's technical assistance and resources. A division's technology plan may not align with the state plan if it reaches a higher degree of innovative educational technology applications. A division also may study current research or conduct a pilot project of innovative concepts, all of which may be incorporated into the plan.

A division should develop an electronic system to facilitate developing and editing the plan. Wikis and blogs are possible tools for extending discussions by committee members between face-to-face meetings. Electronic meeting systems expedite planning discussions, document review and sharing, and reduce the number of face-to-face meetings needed.

As one final suggestion, Batterson encourages division technology planning teams to meet off-site for a one- or two-day planning retreat, with all cell phones, BlackBerries, and other electronic devices turned off. This setting can help the members focus on the future of educational technology with clear minds and minimal distractions.

Implement the Division's Technology Plan and Evaluate the Success

Effective planning establishes priorities and focus for the technology program, which seeks to accomplish the goals and objectives of the technology plan. One management approach currently in vogue for implementing new plans is the Balanced Scorecard (<http://www.balancedscorecard.org/basics/bsc1.html>), in which visions and strategies become actions.

Division administrators should regularly work by and refer to the new plan for direction. They must continually evaluate the plan and its implementation and address the need for changes. The original planning committee, or a new committee, should review the formal and periodic evaluations, analyzing the plan's progress and changes.

In staff meetings, administrators should discuss progress, using the plan as a frame of reference. The new plan, which also provides direction for budget priorities, will be part of the administrator's operational world and guide him or her into the future of educational technology.

Finally, three elements are key to successful planning:

- Involvement, support, and trust of the top administration
- Escaping current thinking
- Avoiding the "cannot . . . because" mindset

¹ James G. Batterson is deputy director for strategic development in the Advanced Planning Office at NASA Langley Research Center and the former head of the Dynamical Systems and Control Branch. During 2006-07, he was on special assignment with the Virginia Secretary of Education's office to analyze Virginia's K-12 physics and chemistry SOL and engineering program. He is a former teacher (M.S. in physics from the College of William and Mary) and a former member of the Newport News City School Board. He has completed work in science, technology, and public policy at The Brookings Institution and the U.S. Office of Personnel Management Executive Training Institute. He also worked with the White House Office of Science and Technology Policy and the National Nanotechnology Coordinating Office.

Recommended Reading, with Annotations by James Batterson

Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed*

–This is a bit (well more than a bit . . . really) long, but reading a few chapters might be enough. It provides a history of societies that survived or failed and some thoughts on why or why not. While Diamond's conclusions are open to argument, the basis for his thinking is very helpful in getting organizations to determine their futures rather than reconciling themselves to attitudes of victimization. It also is available in paperback.

http://www.newyorker.com/archive/2005/01/03/050103crbo_books

Thomas Friedman, *The World is Flat: A Brief History of the Twenty-First Century*

–This book is the popular basis for talk about global competition and collaboration. While reading the entire book is not necessary (though you may want to), everyone needs at least a few chapters of Friedman's reader-friendly prose to get the general idea. It also is available in paperback and on CD.

<http://www.nytimes.com/2005/05/01/books/review/01ZAKARIA.html?partner=rssnyt&emc=rss>

<http://www.thomaslfriedman.com/>

Jerome C. Glenn and Theodore J. Gordon, 2007 *State of the Future*

–The United Nations' (World Federation of U.N. Associates) research provides insights into the future, including Millennium Project research and a special section on Education 2030. The soft-cover hardcopy summary is about 100 pages and includes a 6,000 (yes, six *thousand*) page CD with raw data and reports from the past 10 years of this biennial publication. The cost is approximately \$50 (soft cover with CD).

<http://www.acunu.org/millennium/sof2007.html>

<http://www.wfs.org/revglennjf07.htm>

Ray Kurzweil, *The Singularity Is Near*

–This book provides thoughts on the technology future, a follow-up to Kurzweil's *The Age of the Spiritual Machine*. It focuses on computers achieving human brain speed and capability. It includes interesting historical charts on "Moore's Law" and exponential growth histories of technology. The Web site summarizes many of the main points. It is available in paperback.

<http://singularity.com/>

<http://www.kurzweilai.net/index.html?flash=2>

http://www.ssec.wisc.edu/~billh/g/kurzweil_review.html

http://www.newmediamusings.com/blog/2005/09/review_of_ray_k.html

(Continued next page)

(Recommended Reading - continued from previous page)

Daniel H. Pink, *A Whole New Mind: Why Right-Brainers Will Rule the Future*

–This very short paperback examines the social future while giving a history of how we came to value “left-brain” skills for the past 50 years. It traces the interesting progression from agriculture (raw human strength and endurance), to the industrial age (less about human strength, more about hand skills and machine strength and endurance), to knowledge or the information age (no human strength–mental left-brain abilities). It is available in paperback.

<http://www.danpink.com/>

<http://www.leadershipnow.com/leadershop/1594481717.html>

David Weinberger: *Small Pieces Loosely Joined: A Unified Theory of the Web*

–This is one of the most lucid accounts of how the World Wide Web fundamentally has changed the world and social fabric by providing opportunities for individuals in large networks. It remains a very current, well-written, and informative work. It is available in paperback.

<http://www.smallpieces.com/>

<http://moderndragons.blogspot.com/2006/04/review-singularity-is-near.html>

<http://www.techsoc.com/smallpieces.htm>

http://dannyreviews.com/h/Small_Pieces.html

Note that all Web sites were available as of September 11, 2007.

Additional digital resources that accompany this text may be found at

<http://www.doe.virginia.gov/VDOE/Technology/OET/fyi.shtml>.



www.doe.virginia.gov/VDOE/Technology